
Best Practices for Teaching and Learning

Instructional Framework and
Strategies

Esperanza Academy Charter School

Table of Contents

Best Practices Explained	3
Curriculum Design: UbD.....	3
Marzano Nine Effective Teaching Strategies	4
Academic Vocabulary.....	6
Lesson Planning.....	7
Lesson Planning Template	12
12 Power Words!	13
Teaching Strategies A to Z.....	15
Writing Strategies	17
Collins Writing.....	17
Writing Across the Curriculum with RAFTs	18
Cornell Note-taking System	18
Interactive Student Notebook Guidelines	19
Performance Tasks.....	21

Instructional Framework & Strategies

Best Practices Explained

The term “best practices” embraces specific educational ideas and activities while explicitly ruling others out, is rooted in research, and is manifested through limited and distinctive classroom practices.

What does it look like?

The classroom is

Student centered	Holistic	Cognitive
Experiential	Social	Developmental
Reflective	Collaborative	Constructive
Authentic	Democratic	Challenging

Is has less of: whole class directed instruction, student passivity, worksheet devotion, reading textbooks only, and memorizing facts.

And has more of: experiential, hands-on learning, reading “real” books both fiction and non-fiction, students taking responsibility for setting learning goals, keeping records about those goals, and evaluating them often, where students have choice, and work in teams to collaborate.

Best practices are framed through curriculum design (Understanding by Design), and lesson planning with research-based strategies (Robert Marzano Essential Teaching Strategies, Penn Learning Network).

Curriculum Design: UbD

Unit Planning

Curriculum is being designed around backwards design where the assessment guides the construction of learning goals and measurement.

- I. Develop Your Unit Vision
- II. Create Your Summative Unit Assessment
- III. Translate Your Learning Goals Into Lesson Objectives
- IV. Sequence Your Content And Scaffold Your Lesson Objectives
- V. Schedule Your Objectives On The School Calendar
- VI. Create Your Beginning-Of-Unit Diagnostic Tool
- VII. Create A Tracking System For Your Objectives
- VIII. Continually Adjust Your Plan

Marzano Nine Effective Teaching Strategies

In *Classroom Instruction that Works: Research-based Strategies for Increasing Student Achievement*, Robert Marzano (2001) and his colleagues identify nine high-yield instructional strategies through a meta-analysis of over 100 independent studies. They determined that these nine strategies have the greatest positive affect on student achievement for all students, in all subject areas, at all grade levels. Marzano's nine high-yield instructional strategies are summarized in the table that follows.

Identifying Similarities and Differences
 Nonlinguistic Representations
 Summarizing and Note Taking
 Setting Objectives and Providing Feedback
 Reinforcing Effort and Providing Recognition
 Generating and Testing Hypotheses
 Homework and Practice
 Cues, Questions, and Advanced Organizers
 Cooperative Learning

High Yield Instructional Strategies	Research says	Examples
Identifying similarities and differences	Students should compare, classify, and create metaphors, analogies and graphic representations	T-charts, Venn diagrams, classifying, analogies, cause and effect links, compare and contrast organizers, QAR, sketch to stretch, affinity, Frayer model, etc.
Summarizing and note taking	Students should learn to delete unnecessary information, substitute some information, keep important information, write / rewrite, and analyze information.	Teacher models summarization techniques, identify key concepts, bullets, outlines, clusters, narrative organizers, journal summaries, break down assignments, create simple reports, quick writes, graphic organizers, column notes, affinity, etc.
Reinforcing effort and providing recognition	Teachers should reward based on standards of performance; use symbolic recognition rather than just tangible rewards.	Hold high expectations, display finished products, praise students' effort, encourage students to share ideas and express their thoughts, honor individual learning styles, conference individually with students, authentic portfolios, stress-free environment etc.
Homework and practice	Teachers should vary the amount of homework based on student grade level (less at the elementary level, more at the secondary level), keep parent involvement in homework to a minimum, state purpose, and,	Retell, recite and review learning for the day at home, reflective journals, parents are informed of the goals and objectives, interdisciplinary teams plan together for

	if assigned, should be debriefed.	homework distribution, etc
Nonlinguistic representations	Students should create graphic representations, models, mental pictures, drawings, pictographs, and participate in kinesthetic activity in order to assimilate knowledge.	Visual tools and manipulatives, problem-solution organizers, spider webs, diagrams, concept maps, drawings, maps, sketch to stretch, K.I.M., etc.
Cooperative learning	Teachers should limit use of ability groups, keep groups small, apply strategy consistently and systematically but not overuse.	Integrate content and language through group engagement, reader's theatre, pass the pencil, circle of friends, cube it, radio reading, shared reading and writing, plays, science projects, debates, jigsaw, group reports, choral reading, affinity, etc.

High Yield Instructional Strategies	Research says	Examples
Setting objectives and providing feedback	Teachers should create specific but flexible goals, allowing some student choice. Teacher feedback should be corrective, timely, and specific to a criterion.	Articulating and displaying learning goals, KWL, contract learning goals, etc.
Generating and testing hypothesis	Students should generate, explain, test and defend hypotheses using both inductive and deductive strategies through problem solving, history investigation, invention, experimental inquiry, and decision making.	Thinking processes, constructivist practices, investigate, explore, social construction of knowledge, use of inductive and deductive reasoning, questioning the author, etc.
Questions, cues, and advance organizers	Teachers should use cues and questions that focus on what is important (rather than unusual), use ample wait time before accepting responses, eliciting inference and analysis. Advance organizers should focus on what is important and are more useful with information that is not well organized.	Graphic organizers, provide guiding questions before each lesson, think alouds, inferencing, predicting, drawing conclusions, skim chapters to identify key vocabulary, concepts and skills, A.C.E. anticipation guide, annotating the text, etc.

Academic Vocabulary

Integrating academic vocabulary is an important component of teaching and learning. In order for students to fully understand concepts the vocabulary should be explicitly taught.

Resources

<http://kms.sdcoe.net/getvocal/73-DSY.html>

<http://www.ncte.org/library/NCTEFiles/Resources/Journals/VM/0204-may2013/VM0204How.pdf>

http://www.scoe.org/docs/ah/AH_kinsella2.pdf

<http://www.slideshare.net/carlosrmartinez5/tools-for-teaching-academic-vocabulary>

Best Practices

Word Walls (digital with [WallWisher](#))

Morphology maps

Word Sorts

Vocabulary Journals

Frayer and Fryer Diagrams

Reading Aloud

Establishing Background Knowledge

Concept Maps

4-2-1 Summarizer

Multimedia Vocabulary with [Thinglink](#)

Create and store word lists with [Flashcard Stash](#)

Create vocabulary cards using Google Slides https://drive.google.com/previewtemplate?id=1-AdjRQV_OuCxnq5CRFnXibeT5wJWhTmJzlm93I3QPIU&mode=public

Lesson Planning



4 Lenses of Learning

Every lesson plan, every day, should provide students with rich learning opportunities that reflect the following 4 lenses that brain research tells us impact learning to the greatest extent.

Learning is Meaning-Centered

- Are the students able to find meaning in the material with which they are engaged?
- Are they able to connect the topic at hand with their own lives?

Learning is Language-Based

- Are students reading and writing for various purposes?
- Are students reading and writing in EVERY class, EVERY day?
- Are students generating text, that is, not parroting someone else's answers, but their own when talking and writing?

Learning is Social

- Whose voices are heard in the classroom?
- Are students provided the opportunity to share their reactions, ideas, beliefs, opinions?
- Do they work with peers to share and refine their thinking?

Learning is Human

- Does each student have an opportunity to respond in a way that is unique to him/her (ie, talk, write, design a project, complete an assignment)?
- Does the teacher adjust instruction before, during, and after where appropriate and when assessments call for it?

Use the Model of Effective Engagement to plan lessons from the UbD Unit Plans.

Models for Student Learning

A Summary of Recent Research

What model most improves both short and long term student learning?

See it ——— Say it ——— Write it

What model most effectively deepens both understanding and retention?

See it ——— Say it ——— Write it ——— Apply it

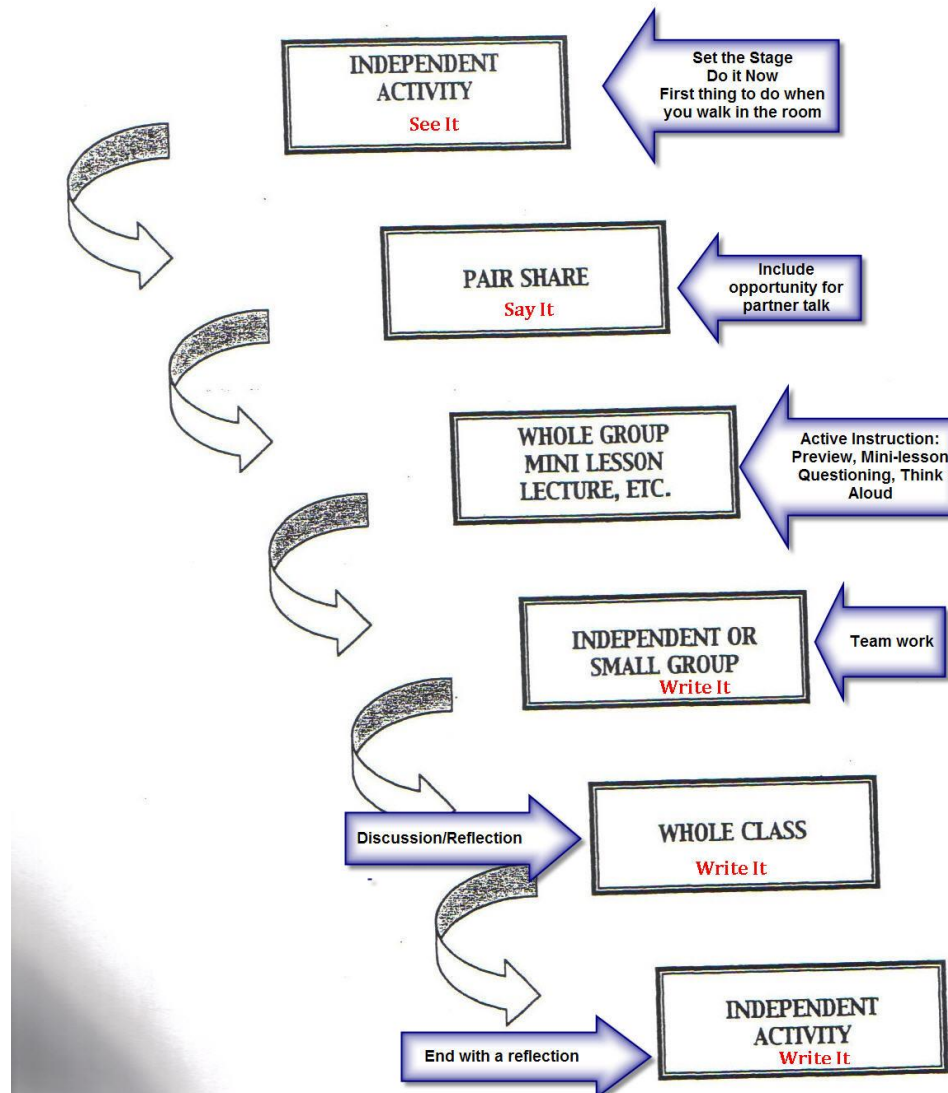
What one student-reported factor most effects student performance?

Motivation

What one teacher-reported factor most effects student performance?

Motivation

AN EFFECTIVE MODEL OF ENGAGEMENT



What a blocked lesson looks like:

Clear Learning Goal, aligned with standards Essential Question(s)							
Framework	Independent Activity	Share Out		Whole Group Mini-Lesson	Small Group/ Individual	Whole Class Activity	Independent Activity
Timing	10 min	5 min		20 min (or less)	20 min (or more)	5 min	10 min
Structure	<ul style="list-style-type: none"> Individual Pairs Small Groups 	<ul style="list-style-type: none"> Individual/small group to whole class Interaction between student & teacher 	TRANSITION	<ul style="list-style-type: none"> Whole Groups Small Groups 	Flexible small groups <ul style="list-style-type: none"> Homogeneous Heterogeneous Special Ed - Inclusion teachers instruct using eligible content	Whole Group	Individual
Purpose	<ul style="list-style-type: none"> Activate prior knowledge Motivate for learning Build background knowledge 	<ul style="list-style-type: none"> Address the "big"/essential question Engagement Draw on background knowledge 		<ul style="list-style-type: none"> Deliver the content Explicit instruction that ties to the learning goal(s) 	<ul style="list-style-type: none"> Differentiated instruction Target students' instructional levels 	<ul style="list-style-type: none"> <i>Check for understanding</i> Summarize/clarify/feedback 	<ul style="list-style-type: none"> <i>Check for understanding</i> Meta-cognitive activities <i>Formative assessments</i>
Instructional Strategies/ Activities	<ul style="list-style-type: none"> Any "Before" activities Big Question Type I & II prompts Do Now 	<ul style="list-style-type: none"> Random Reporter On the spot 		<ul style="list-style-type: none"> Any "During" strategies <i>Questioning</i> <i>Modeling</i> <i>Teaching a Strategy</i> Any "After" strategies 	<ul style="list-style-type: none"> Any "During" or "After" strategies <i>Team Talk</i> <i>Partner Reading</i> <i>Jigsaw activity</i> Meta-cognitive strategies 	<ul style="list-style-type: none"> <i>Question and answer</i> <i>Summary</i> <i>Random Reporter</i> <i>Bump in the Road</i> 	<ul style="list-style-type: none"> Any "After" strategies <i>3-2-1</i> <i>Ticket out the door/Exit Card</i> <i>25 word summary</i>

What a period lesson looks like:

Clear Learning Goal, aligned with standards Essential Question(s)							
Framework	Independent Activity (POD)	Share Out		Whole Group Mini-Lesson	Small Group/ Individual	Whole Class Activity	Independent Activity (Exit)
~Timing	3-5 min	3 min		10 min (or less)	10 min (or more)	5 min	5-7 min
Structure	<ul style="list-style-type: none"> Individual Pairs Small Groups 	<ul style="list-style-type: none"> Individual/small group to whole class Interaction between student & teacher 	T R A N S I T I O N	<ul style="list-style-type: none"> Whole Groups Small Groups 	Flexible small groups <ul style="list-style-type: none"> Homogeneous Heterogeneous Special Ed - Inclusion teachers instruct using eligible content	Whole Group	Individual
Purpose	<ul style="list-style-type: none"> Activate prior knowledge Motivate for learning Build background knowledge 	<ul style="list-style-type: none"> Address the "big"/essential question Engagement Draw on background knowledge 		<ul style="list-style-type: none"> Deliver the content Explicit instruction that ties to the learning goal(s) 	<ul style="list-style-type: none"> Differentiated instruction Target students' instructional levels 	<ul style="list-style-type: none"> <i>Check for understanding</i> Summarize/clarify/feedback 	<ul style="list-style-type: none"> <i>Check for understanding</i> Meta-cognitive activities <i>Formative assessments</i>
Instructional Strategies/ Activities	<ul style="list-style-type: none"> Any "Before" activities Big Question Collins Type I & II prompts Do Now 	<ul style="list-style-type: none"> Random Reporter On the spot 		<ul style="list-style-type: none"> Any "During" strategies <i>Questioning</i> <i>Modeling</i> <i>Teaching a Strategy</i> Any "After" strategies 	<ul style="list-style-type: none"> Any "During" or "After" strategies <i>Team Talk</i> <i>Partner Reading</i> <i>Jigsaw activity</i> Meta-cognitive strategies Collins Types III & IV 	<ul style="list-style-type: none"> <i>Question and answer</i> <i>Summary</i> <i>Random Reporter</i> <i>Bump in the Road</i> 	<ul style="list-style-type: none"> Any "After" strategies <i>3-2-1</i> <i>Ticket out the door/Exit Card</i> <i>25 word summary</i> Collins Type I & II

Lesson Planning Template

Unit Plan:	Understanding:	Essential Questions:	Objectives:	Performance Task:	
	Monday	Tuesday	Wednesday	Thursday	Friday
Independent Activity: Problem of the Day (POD)					
Share Out					
Mini Lesson					
Individual or Small Group Activity					
Whole Group Summarization of Learning					
Independent Activity: Exit					
Special Education accommodations					
ELL Accommodations					
Technology Integration					

12 Power Words!

The 12 Power Words are verbs that students see on every standardized test. Learn these words to better understand what you're being asked to do on a test. Include these words in instruction as often as you can.

Analyze	Break it down into parts. Tell about each of the parts
Infer	Read between the lines. What is the hidden meaning?
Evaluate	Tell the good and the bad. Judge it.
Describe	Tell me about it. Give details about it. Paint a picture with words.
Support	Back up the information. Prove. Provide evidence.
Explain	Teach me or show me. Tell the steps.
Summarize	Tell the main idea. Tell the beginning, middle, and end.
Compare	Tell all the ways they are the same.
Contrast	Tell all the ways they are different.
Predict	Hypothesize. Make an educated (smart) guess.
Formulate	Create. Put together.
Trace	Outline. Explain the development. Follow (or explain) the path.

Larry Bell's 12 Power Words (with minor adaptations)

<http://w4.nkcsd.k12.mo.us/~stc/pdfs/Map%20power%20words.pdf>

How to Use the 12 Power Words in Instruction

1. Post the words around the classroom
2. Play a matching game to determine which words students need to learn.
3. Use the words in all quizzes or test stem questions.
4. Incorporate the words into teacher talk.
5. Create puzzle games with the words
6. Have students make stem questions using the words and content.
7. Create a mnemonic.
8. Develop a daily "Do Now" activity, i.e. Today's power word is **explain**, which means to tell how you arrived at something by teaching me, showing me, or telling me the steps. In your journal, explain how...
9. At the end of class, use the Outcome Sentence strategy and incorporate the day's power word into the sentence starter. i.e. *Explain* one thing you learned today. *Explain* what surprised you most today. *Explain* how you realized something new today. *Explain* why you do not understand something that was taught today. *Explain* why you are still curious about something you learned today.

Strategy Showcase

Today's featured strategy is **Outcome Sentences**, which is variation of exit slips and allows you to complete your lesson with some writing. Here's how it works - at the end of a lesson, give students a sentence prompt(s) to review what they have learned. For example:

1) I learned ...

2) I was surprised ...

3) I now realize ...

4) I do not understand ...

5) I would like to find out more about ...

You can collect these as you would exit slips, or have students put them in a journal and periodically review them to assess how well your lessons are going, and/or begin the next day's lesson based on the information you have learned from your students' written responses.

Teaching Strategies A to Z

This is a list of teaching strategies that are research-based and correlate to the instructional framework.

A

Anticipation Guide
Assigned Questions
Author's Chair

B

Balanced Literacy
Book Talks
Brainstorming

C

Case Studies
Categorizing
Classroom Conversations
Cloze Procedure
Clustering
Compare & Contrast
Computer Assisted Instruction
Concept Attainment
Concept Formation
Concept Maps
Conducting Experiments
Cooperative Learning
Creative Problem Solving

D

Debates
Decision-making Process
Demonstrations
Didactic Questions
Discussion
Drill & Practice

E

Essays
Experience Charts
Explicit Teaching
Expository, Narrative & Persuasive Writing

F

Field Observations
Field Trips
Focused Imaging

G

Games
Graphic Organizers
Guided & Assisted Reading
Guided & Assisted Retellings
Guided Reading & Thinking

H

Heterogeneous Grouping
Homogeneous Grouping

I

Independent Research
Inquiry
Instructional Groups
Interdisciplinary Approach
Interviewing

J

Jigsaw
Journal Writing

K

K-W-L

L

Laboratory Groups
Learning Activity Packages
Learning Centers
Learning Contracts
Learning Logs

Lecture
Listen & Visualize
Literacy Centred Instruction
Literature Based Instruction
Literature Circles

M

Mind Mapping
Mini Lessons
Miscue Analysis
Model Building
Modes of Reading
Multiple Intelligence

N

Narrated Reading
Narratives
Needs-based Grouping
Novel Studies

O

Oratory, Public Speaking and Speech Writing

P

Panels
Peer Partner Learning
Picture Books and Illustrator Studies
Picture Word Inductive Model (PWIM)
Probable Passage
Problem Solving

Q

QARs
Questioning Levels
Questioning Techniques

R

RAFT
Read Aloud
Reading for Meaning
Read & Paraphrase
Read & Respond

Read, Pause & Reflect
Readers' Theater
Reciprocal Reading
Reflective Discussion
Reports
Research Projects
Response Journal
Role Playing
Running Record

S

Scaffolding
Science Fairs
Science Olympics
Self Monitoring Strategies
Simulations
SQ3R
Sociograms in Literature
Story Mapping
Storytelling
Structured Controversy
Structured Overview
Study Groups
Surveys

T

Talking Circles
Team Teaching/Modeling of Instruction
Think Alouds
Think, Pair, Share
Thinking Strategies
Tutorial Groups

U

V

Visual Imaging

W

Webbing
WebQuests
Word Walls
Working with Words

Writing to Inform	X
Write Aloud	
Writer's Workshop	Y
Writing Conferences	
Writing Process	Z

Writing Strategies

All teachers are writing teachers. Writing across the curriculum is also an important component clearly identified in PA Common Core standards. As with literacy, writing is an expected component in all content areas. Align writing using the literacy alignments from Academic and Common Core Standards.

Here are a few research-based best practice writing strategies that you can include:

- a. Collins Writing http://www.collinsed.com/five_types_of_writing.htm
- b. RAFT http://www.writingfix.com/wac/Writing_Across_Curriculum_RAFTS_Science.htm
- c. Cornell Note taking <http://www.sophia.org/cornell-notetaking-system-tutorial>
 - i. Note maker <http://www.cornell-notes.com/>
- d. Interactive Notebook <http://www-pvhs.stjohns.k12.fl.us/teachers/middaug/keepinginteractivenotebooksinscience.pdf>

Collins Writing

Collins Writing: The Five Types of Writing

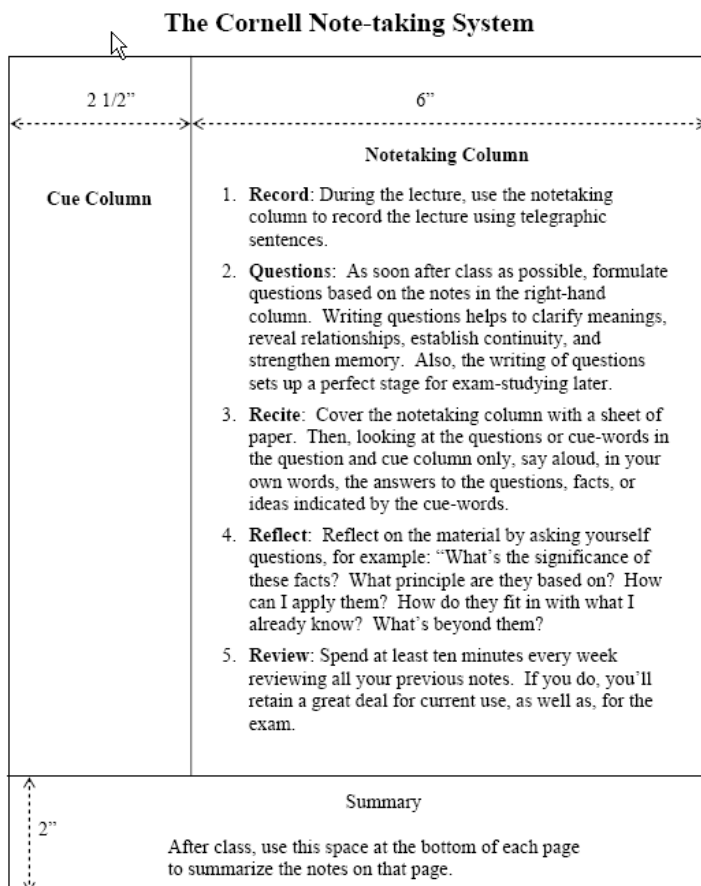
Type	Description	# of Drafts & Evaluation
Type 1: Capture Ideas	Type 1 writing gets ideas on paper -- it's brainstorming. Type 1 is timed and requires a minimum number of items or lines to be generated. Questions and/or guesses are permitted.	<ul style="list-style-type: none"> One draft Outcomes are evaluated with a check (✓) or a minus (-)
Type 2: Respond Correctly	Type 2 writing shows that the writer knows something about a topic or has thought about the topic. It is a correct answer to a specific question.	<ul style="list-style-type: none"> One draft Graded as a quiz
Type 3: Edit for Focus Correction Areas	Type 3 writing has substantive content and meets up to three specific standards called "focus correction areas" (FCA). Revision and editing are done on the original.	<ul style="list-style-type: none"> one draft (save) Read out loud and reviewed to see if the draft completes the assignment, is easy to read and meets standards set for the focus correction areas.
Type 4: Peer Edit for Focus Correction Areas	Type 4 writing is Type 3 writing that is read aloud by someone else.	<ul style="list-style-type: none"> Two drafts (save) Writing is critiqued by a peer and revised by the author
Type 5: Publish	Type 5 writing is of publishable quality.	<ul style="list-style-type: none"> Multiple drafts (save) Published work

Writing Across the Curriculum with RAFTs

Its sole purpose is to make writing feel more authentic in two ways: 1) students are asked to think and write from a real world person's perspective, and they are asked to shape their ideas to appeal to an audience outside the classroom; 2) because they are considering perspective as they go through the writing process, students are being asked to think at a much deeper level of Bloom's Taxonomy. It's no wonder R.A.F.T. writing assignment have become very popular in the last decade, especially with content area teachers who are looking for ways to use more writing across the curriculum in their classrooms.

What is a RAFT Writing Assignment? R.A.F.T. writing prompts challenge students to assume a Role before writing, to write for an imaginary Audience, to write using a given Format, to write about a certain Topic. This is a simple but powerful technique that will inspire more thoughtful writing from yourself or your students.

Cornell Note-taking System



Adapted from How to Study in College 7/e by Walter Pauk, 2001 Houghton Mifflin Company

Interactive Student Notebook Guidelines

What is the purpose of this notebook?

The purpose of the interactive notebook (IAN) is to enable you to be a creative, independent thinker and writer. Interactive notebooks will be used for class notes as well as for other activities where you will be asked to express your own ideas and process the information presented in class.

What type of notebook should I have?

I have found that a marble type composition book works well and lasts the longest, although it is small in size. You can find them cheaply too. A spiral will work, but may fall apart with prolonged use. A binder with loose-leaf will work too.

How should my notebook be organized?

Your notebook will be organized into chronological pages. The beginning of your notebook will consist of a Table of Contents that should be updated on a daily basis.

Will my notebook be graded?

Notebooks will be graded periodically for Completeness and Visual Appearance, at least once a quarter. All class notes and notebook assignments should be updated, even for the days you were absent. Each entry should be titled and dated. Your artistic touch should be visible throughout the notebook. Creativity and originality are strongly encouraged. Adding illustrations, decorative borders or other creative input to illuminate written assignments is always welcome (so long as it does not obstruct the reading of the text).

How will my notebook get to you?

You will be asked to scan certain pages and attach them in an email to me.

Some additional information

Read the “Setting Up My Notebook” page. **Print this paper and paste it onto the inside front cover of your notebook.**

I will try to keep a “Teacher Notebook” as well. This will allow me to scan and upload images of what your pages should look like.

In the daily lesson, you will start to see something like “copy this down in your IAN 25”. That means I want you to copy something, or complete an activity on the interactive notebook (IAN) page numbered 25. I will usually give you a title for that page too. When you have finished the activity for that page, don’t forget to update the page in the Table of Content area also.

You might also be asked to complete a worksheet that you have downloaded and printed from the web. If you have written information on the IAN page, the handout will be pasted in a “flap” style. What I mean, is fold the paper in ½ from top to bottom. Run a strip of glue onto an edge and paste the paper in the IAN, where it can be lifted up. I will upload a picture of what this looks like.

Why am I doing this again?

This method will give you a record of what you have learned, making a personal “textbook.” It will help you stay organized. It will be a record of the work you have completed. You can use the IAN to help you study for quizzes or tests. Since we don’t “see” each other, the IAN keeps us all on the same page.

Setting Up Your Notebook

Inside Front Cover:

Please glue in to place your Notebook Guidelines.

Pages One – Seventy (see how far your pages go): Number all pages (front and back) in the upper outside corner.

Page One: Title Page

This information may appear anywhere on the first page. This notebook is yours; this is your opportunity to make it look unique. Stifle the urge to be silly, but let loose your creativity. The page must include:

- Your name
- Mrs. Faulkner-Beitzel (spell it correctly!) ☺
- Class Name (i.e. Sociology or Psychology)
- 2006 - 07
- Color illustrations, collages, cartoons...It's up to you.
- Paste Making A Document for My IAN

Pages Two – Four: Table of Contents

On the top line (not in the air!) of page three, you are to write *Table of Contents*. Skip a line, and on the next line write, in order: Date, Title, and Page. We will head each new page of the Table of Contents (TOC) as it becomes necessary.

Table of Contents		
Date	Title	Page

Page Five: Title Page for Unit 1 and Chapter 1

The title page is portrayed as an illustration of what you will be learning in the chapter. So look over Chapter 1. What is it all about? Draw pictures, make statements, glue Internet graphics as a collage. Be creative. You must include the Chapter title somewhere on this page!

Okay. Now we are ready to begin using our notebooks!

Performance Tasks

According to UbD, “understanding is revealed in performance” (Wiggins & McTighe, 2005, p. 153) and the designed task should solve a real-world problem. The easiest way to create these tasks is to use the G.R.A.S.P.S. model

G

Real -world Goal

R

Real-world Role

A

Real-world Audience

S

Real-world Situation

P

Real-world Products or Performances

S

Standards

GOAL

Provide a statement of the task.

Establish the goal, problem, challenge, or obstacle in the task.

ROLE

Define the role of the students in the task.

State the job of the students for the task.

AUDIENCE

Identify the target audience within the context of the scenario.

Example audiences might include a client or committee.

SITUATION

Set the context of the scenario.

Explain the situation.

PRODUCT

Clarify what the students will create and why they will create it.

STANDARDS and CRITERIA [INDICATORS]

Provide students with a clear picture of success.

Identify specific standards for success.

Issue rubrics to the students or develop them with the students

Example

G- (goal) To educate the local citizens about planning and maintaining a sustainable organic vegetable garden

R- (role) Ecologist/ gardener who represents an environmental organization

A- (audience) local inhabitants

S- (situation) The government is populating a former superfund site. It has invited the environmental organization to educate the people about organic methods of farming to avoid a repeat of the earlier debacle of environmental pollutants through overuse of fertilizers and pesticides.

P- (purpose and product) Educate the people about the importance of all organisms in the local environment and how they can be used to improve fertility of the soil and control pests by creating a plan and planting guide for an organic vegetable/flower garden.

S- (standards for performance) See rubric

- Research report/ presentation
- Planting guide/plan for the organic garden that includes;
- What plants will you plant in the garden as source for food
- How will you plant to minimize nutrient depletion of the soil?
- How, when and where in the garden will you plant to maximize production
- How will you control loss due to pests
- What organisms will you cultivate to maintain the health of your organic garden?